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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,078	04/16/2004	Hrabanus Hack	4965-000180	9956

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EXAMINER	
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ART UNIT	**PAPER NUMBER**
1731	

MAIL DATE	DELIVERY MODE
07/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/826,078	HACK ET AL.	
	Examiner	Art Unit	
	Jason L. Lazorcik	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 April 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) *17-25* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *IDS Filed 4/16/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☒ Other: *IDS filed 7/7/2004, 11/30/2005*.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of claims 1-16 drawn to a flame hydrolysis process for the production of glass bodies of doped silica glass in the reply filed on April 5, 2007 is acknowledged.

Claim Rejections - 35 USC § 102

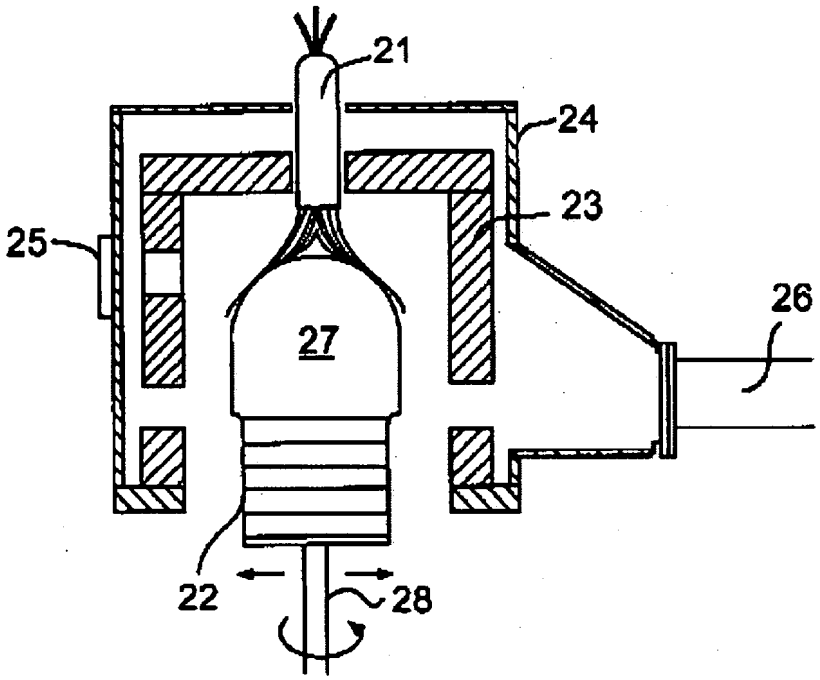
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, and 16 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Jinbo (US 6,473,226 B1). Support for the following rejection can be found through the entire document and particularly in the following sections; (Column 5, line 23 to Column 6, line 36), (Column 7, line 9-38)

With particular respect to independent **Claims 1 and 2**, Jinbo teaches a method for forming a doped silica glass member by flame hydrolysis of precursor materials which presents reduced striae. Specifically, Jinbo teaches a flame hydrolysis method wherein a burner (21) made of silica glass is provided to generate a flame directed on a target (22) (see excerpt figure 2 below). In the figure, the target is "arranged substantially horizontally" with the formed glass body (27) (grown substantially in a vertical direction" (**Claim 12**).

FIG. 2



The reference continues by teaching "an oxygen containing gas and a hydrogen containing gas are expelled from the burner (21) and are mixed to form a flame. A silicon compound, as the material, is diluted with a carrier gas and expelled from the center portion of the burner (21) into the flame thus formed." (Column 5, lines 44-57).

The synthetic silica glass ingot comprising "between about 0.01 wt% and about 0.5 wt %" a fluorine dopant (Column 6, lines 11-13) is formed by flame hydrolysis of the precursor generated from the single burner (21) (**Claim 3,5,6,8,9**). Jinbo teaches that during the deposition the target (22) is rotatably driven (see figure 2 above) (**Claim 10**)

and "pulled down in such a way as to maintain a constant distance from the burner 21 to synthesis surface at the upper part of the ingot" (Column 5, lines 54-57) (**Claim 11**).

With respect to the claimed molding process, the reference discloses that "if after the ingot is synthesized in this or a similar manner, the amount of striae is found to be greater than a permissible value, it is possible to alleviate the strength of the striae through a thermal treatment". To this end, the Jinbo reference teaches heating the ingot higher than the softening point and subjecting the ingot to a press-formation "in such a way as to expand the diameter of the rod". It is the Examiners understanding that this "press-formation" reads directly upon Applicants claimed "reshaping" operation of forming the first glass body into the second body "having a larger breath and a smaller height" (**Claim 4**). Jinbo subsequently teaches (Column 9, lines 5-8) that optical members are cut from the thus formed doped silica ingot in "at least one further reshaping step" (**Claim 16**).

Claim 13 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Jinbo (US 6,473,226 B1) as applied to claim 10 above.

It is the Examiners position that the prior art reference sets forth no explicit limitation upon the global orientation of the Jinbo process. Therefore absent any compelling and substantially unexpected results to the contrary, it would have been well within the prevue of one having an ordinary level of skill in the art at the time of the

invention to determine an appropriate configuration for the disclosed process commensurate with routine optimization of spatial and economic driving factors. It is therefore the Examiners position that the claimed process wherein "said target is arranged substantially vertically and said first formed glass body is grown substantially in a horizontal direction" is a merely obvious extension over the teachings set forth in the prior art.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 7, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jinbo (US 6,473,226 B1) as applied under 35 U.S.C. 102(b) above and in further view of Okamoto (US 4,358,306).

With respect to **Claim 7**, Jinbo teaches producing a synthetic silica glass ingot comprising "between about 0.01 wt% and about 0.5 wt %" a fluorine dopant (Column 6, lines 11-13). The reference is however silent regarding incorporation of a dopant in a concentration of "at least 1 wt%" as claimed. Okamoto teaches a method for reducing striae in a synthetic silica ingot manufactured in a flame hydrolysis technique similar to that disclosed in the Jinbo reference.

Okamoto specifically teaches that the "methods of vapor-phase decomposition in a high temperature flame are advantageous when the fused quartz glass formed thereby is desired to be uniformly doped with a controlled amount of a dopant such as germanium, aluminum, iron, boron, phosphorus, zinc, tin, and the like with an object to modify the refractive index or other properties of the fused quartz glass." (Column 1, lines 46-53). In view of the Okamoto teachings and absent any compelling and substantially unexpected results to the contrary, it would have been obvious to one having an ordinary level of skill in the art to incorporate a single or a combination of dopants in the claimed concentration range (e.g. at least 1 wt%) as a means to impart a desired refractive index to the synthetic quartz glass.

Similarly with respect to **claims 14 and 15**, Jinbo is silent regarding a preferred material of construction for the target (22). Okamoto however teaches that the method of forming synthetic silica by flame hydrolysis usually utilizes a "rotating target of quartz glass heated at a temperature higher than the vitrification temperature" (Column 1, Lines 34-35). In view of the Okamoto teachings, it would have been obvious to one of ordinary skill in the art to utilize a silica or quartz disk as the target (22) in the Jinbo

flame hydrolysis technique. Further, since one of ordinary skill in the art would recognize that the target (22) would become integrated with the growing silica ingot, it would be a merely obvious extension to match the dopant profile of the target to desired the dopant profile of the growing ingot.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason L. Lazorcik whose telephone number is (571) 272-2217. The examiner can normally be reached on Monday through Friday 8:30 am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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